



MARKED-UP COPY OF AMENDED ABSTRACT:

ABSTRACT OF THE DISCLOSURE

A system and method of determining the copy protection features of a program, and notifying a potential user of the program of these features, is provided. The copy protection features of the program first are analyzed. ~~When copy protect is applied to a program indicated by a user, the content of the copy protect is analyzed.~~ On the basis of this ~~the~~ analysis, ~~result,~~ a message such as "this program cannot be recorded with IEEE1394, optical digital audio" is displayed to the user. By displaying such a message, the user can easily recognize that copy protection is applied to ~~thean indicated program,~~ and that, for example, the program ~~so that it~~ can be recorded (picture-recorded) in an analog style, ~~but it~~ cannot be digitally recorded. Accordingly, the user is ~~can~~ easily made aware of ~~recognize~~ the copy protection features of the program before using or purchasing the program.

MARKED-UP COPY OF AMENDED SPECIFICATION PARAGRAPHS:

[0005] Even if the ~~when the process of temporarily storing these~~ digital data distributed by the digital broadcast are temporarily stored in a recording medium and copied ~~copying the data into another recording medium~~ many ~~is repeated at plural times,~~ the image quality and the sound quality of ~~as~~ the digital data do ~~are~~ not deteriorated, and thus plural copies can be created. Such a situation is unfavorable from the viewpoint of copyrights, and thus distributed digital data are subjected to a method of preventing such illegal copies (copy protect).

[0009] As shown in the tables of Figs. 1 to 3, the specification on the copy protect is given so as to meet the type of ~~the~~ content and the output destination. Of course ~~Therefore,~~ the user may become frustrated ~~merely causes disturbance even~~ when the user is directly supplied s the information on the copy protect. However, when no information on the copy protect is supplied, the user may nevertheless be unable to ~~cannot~~ record pictures because the copy protect is applied thereto although the

user wants to record the pictures, ~~so that~~ there may occur a situation, therefore, in which the user cannot watch/listen to the pictures although the user paid to watch/listen to them.

[0015] Fig. 1 is a diagram showing the copy protect protocol for digital TV service;

[0016] Fig. 2 is a diagram showing the copy protect protocol for digital audio service;

[0017] Fig. 3 is a diagram showing the copy protect protocol for digital data service;

[0019] Fig. 5 is a flowchart showing the operation of the receiver of Fig. 4;

[0020] Fig. 6 is a continuation of the flowchart subsequent to the flowchart of Fig. 5;

[0021] Fig. 7 is a further continuation of the flowchart subsequent to the flowchart of Fig. 5;

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0037] When the video encoder 14 outputs input video data to a television receiver 50, the video encoder 14 subjects the input video data to encode processing meeting the television receiver 50, for example, the encode processing based on the NTSC (National Television System Committee) system ~~to the input video data~~, and then outputs the encoded data to the television receiver 50. The video data processed by the stream processor 13 are also output to a component 51 treating digital data.

[0041] The data corresponding to an instruction which the user transmits ~~makes~~ by using the remote controller 32 are received by a photodetector 18 of the receiver 10. The data received by the photodetector 18 or the data corresponding to the instruction based on the switch 33 are output to a display controller 19. The display controller 19 outputs the data from the photodetector 18, or the data from the switch 33, to a controller 20 if occasion demands, and also controls ~~performs~~ the display control ~~of a display portion 21~~ according to the input data.

[0043] When a subscription for viewing audience ~~of a pay~~ program is taken out, data supplied from a partner with which the

subscription is taken out are stored in an IC card 31. This data is a descrambling key for descrambling the scramble or the like. The IC card 31 is mounted in a card I/F (Interface) 22 so that ~~the data~~ recorded data are read out. The data thus read out are output to the controller 20.

[0045] The operation of the receiver 10 when the user tunes a program will be described with reference to the flowcharts of Figs. 5 to 7. In step S1, the tuning ~~by~~^{of} the user is started. The user can select a desired program (channel) by the remote controller 32 or the switch 33. In step S2, it is judged whether the program selected by the user can be watched/listened to.

[0050] On the other hand, if it is judged in step S3 that the IC card 31 can be accessed, the processing goes to step S5 to judge whether a selected program has a restriction on the age for watching or listening to watch/listen to the program. If it is judged that the program has an the age restriction, ~~in step S6~~ the display is switched to an ~~input~~ frame for input of a code number in step S6, and the program ~~it~~ is set to a code-number input standby state.

[0052] On the other hand, if it is judged in step S5 that no age restriction is imposed, the processing of step S6 is skipped, and the processing goes to step S7. It is judged in step S7 whether the selected program is a program to be purchased or not. ~~A~~The program for which it is judged ~~that it is unnecessary to purchase the program~~ is a charge-free broadcast program or a program for which it is judged that athe subscription for the program was ~~has~~ taken out in advance.

[0053] If it is judged in step S7 that the program selected by the user is a program which need not ~~is not needed to be~~ purchased, in other words, the program~~it~~ can be watched/listened to, ~~so that~~ the tuning processing is finished and the screen of the television receiver 50 is switched to ~~the display of~~ the program selected. On the other hand, if it is judged in step S7 that the program selected by the user is a program which must ~~is~~ ~~needed to be~~ purchased, the processing goes to step S8 (Fig. 6).

[0054] ~~If it~~ is judged in step S8 whether the time for purchasing the program selected by the user has expired.~~is over a purchase term.~~ For example, ~~in such a case that~~if the broadcast time for the program selected by the user has terminated,~~is a past program that has already passed over the broadcast time,~~ it is judged that the purchase time has passed. If it is judged in step S8 that the purchase time for the program has passed, the processing goes to step S9.

[0057] The processing of the step S12 and the subsequent steps is carried out according to the content described in such a descriptor. It is judged in step S12 whether the copy control type is equal to 01 or not. If the copy control type is equal to 01, some restriction exists on copying the program~~in the copy~~ as is apparent from Fig. 1 to Fig. 3. If it is judged in step S12 that the copy control type is not equal to 01, the processing goes to step S13.

[0062] Further, if it is judged in step S13 that the service type is not ~~the television,~~ and it is judged in step S14 that the control type is not equal to 11, the processing goes to step S15 to judge whether ~~it is the television receiver 50~~ is of the type in which the receiver 10 is installed. The above processing procedure is carried out because only sounds can be supplied from the television receiver 50 to a user ~~even when the service type is not the television,~~ for example when the service type is a radio.

[0063] If it is judged in step S15 that the receiver 10 is not a built-in receiver, in other words, if it is judged that the receiver 10 and the television receiver 50 are connected to each other with an external terminal through a cable or the like, the processing goes to step S16 in which a message to make the user recognize that the program is a program which the user cannot watch/listen to as shown in Fig. 9 is displayed on the screen of the television receiver 50.

[0065] If it is judged in step S12 that the copy control type is equal to 01, or it is judged in step S14 that the control type

is equal to 11, the processing goes to step S17. The case where the control type is equal to 01 and the case where the control type is equal to 11 show that some restriction is imposed on copying the program~~the copy~~.

[0066] It is judged in step S17 whether CGMS (digital recording control data) is equal to 00. As is apparent from Fig. 1 to Fig. 3, four flags of 00, 10, 01 and 11 are used~~prepared~~ for the digital recording control data (CGMS) for designating all the various~~every~~ control types. When CGMS is equal to 00, it shows that copying is allowed.

[0067] If it is judged in step S17 that CGMS is not equal to 00, the processing goes to step S18 to judge if CGMS is equal to 10. If CGMS is equal to 10, it shows that only one copy is allowed. If it is judged in step S18 that~~whether~~ CGMS is not equal to 10, the processing goes to step S19 to judge whether APS (Analog Protection System) is equal to 00.

[0069] In step S21, a display frame as shown in Fig. 11 is displayed on the television receiver 50. When such a display frame is displayed, it shows that copying is allowed if it is analog. When the processing of step S20 or step S21 is finished, the processing goes to step S22, and in step S22 it is judged whether a "cancel" button in the display frame shown in Fig. 10 or Fig. 11 is operated. If it is judged in step S22 that the "cancel" button is operated, the tuning processing is finished.

[0071] On the other hand, if it is judged in step S18 that CGMS is equal to 10, the processing goes to step S23 to judge whether an additional fee is needed. If it is judged that CGMS is equal to 10, as is apparent from Fig. 1 to Fig. 3, copying is allowed. It is judged in step S23 whether an additional fee is needed for~~to~~ the copying (recording), particularly whether an additional fee is needed to analog copy. If it is judged in step S23 that no additional fee is needed, the processing goes to step S26 (Fig. 7). The processing also goes to step S26 if it is judged in step S17 that CGMS is equal to 00 (when it is judged that copying is free).

[0072] On the other hand, if it is judged in step S23 that ~~an~~the additional fee is needed, the processing goes to step S24 to ~~make such a display as to make the user recognize that an~~ additional fee is needed ~~for~~the recording, as shown in Fig. 12 (in the example of Fig. 12, a yen mark (¥) is displayed on a "recording" button). As shown in Fig. 12, the additional fee for recording is displayed.

[0073] On the display frame as shown in Fig. 12, it is judged in step S25 whether the user operates the "cancel" button. If it is judged in step S25 that the "cancel" button is operated, the processing of the tuning is finished. If it is judged in step S25 ~~that whether~~ the "cancel" button is not operated, in other words, if it is judged ~~that whether~~ the "only watching/listening" button or the "recording" button is operated, the processing goes to step S26.

[0076] A "purchase"~~1~~ button and a "purchase cancel" button are provided ~~inat~~ the lower portionside of the screen. When selected ESs need additional fees, the total amount of the additional fees is displayed between these buttons. The user selects a desired ES using ~~by referring~~ such a display frame, and operates the "purchase" or "purchase cancel" buttons.

[0080] On the other hand, if it is judged in step S31 ~~that whether~~ the program which the user decides to purchase is within the purchase time, the processing goes to step S32 to judge whether descrambling~~er~~ can be performed. If it is judged in step S32 that descrambling~~the descrambler~~ cannot be performed, ~~for example, because of this means that the descrambler cannot be performed due to some restriction, and thus~~ a display to make the user recognize this fact is provided~~made~~ in step S33. In step S33, such a display frame as shown in Fig. 15 or Fig. 16 is displayed on the television receiver 50.

[0081] In the display example shown in Fig. 15, the program which the user decides to purchase is a program having a restriction to a watching/listening district, and it is a display frame when the user does not lives inat the ~~restricted~~ district

in which watching/listening is permitted. The display example of Fig. 16 is a display frame displayed when the watching/listening (purchasing) is not allowed under a subscription condition such as like a case where the program which the user decides to purchase belongs to a channel to which the user does not subscribe, the program is a program for which the user does not subscribe, or the like. ~~When~~In such a display frame is displayed, and the tuning processing is finished.

[0083] In step S35, a message is displayed on the television receiver 50 to ~~make the user recognize that the program which he or she wishes to purchase decided to be purchases cannot be purchased because the program's cost it exceeds the upper limit of the user's payment card as shown in Fig. 17 is displayed on the television receiver 50,~~ and the tuning processing is finished. On the other hand, if it is judged in step S34 that the program does not exceed the upper limit of the payment card, the processing goes to step S36, and a preview of the purchased program decided to be purchased as shown in Fig. 18 is displayed for only a predetermined time (for example, 3 seconds) as shown in Fig. 18. Further, a message indicating that the procedure for the purchase has been completed is also displayed.

[0084] The program desired by the user is selected as described above. As described above, the copy protect is determined~~stipulated~~ in accordance with the service type and thea device which is thean output destination of the received data. Therefore, according to the above processing, the user can easily purchase a desired program without suffering cumbersome complicated stipulations on the copy protect, and also the user does not suffer the such a disadvantage of being unable to that the user cannot make a recording because of the application of copy-protect and thus be able to only watch/listen to a program after the user purchases the program can be prevented.

[0086] A series of processing steps as described above can be implemented using ~~executed in the hardware style, however, it may be carried out in the or software style.~~ When the series of processing steps is ~~executed in the~~ implemented using software,

style, the program constituting the software is installed from a recording medium into a ~~computer installed in a special-purpose computer hardware~~ or a general ~~purpose personal~~ computer which can perform various functions by installing various programs therein.

[0087] As shown in Fig. 19, this recording medium can be constructed ~~by~~ not only as a package medium comprising a magnetic disc 121 (containing a floppy disk), an optical disc 122 (containing CD-ROM (Compact Disc-Read Only Memory)), DVD (Digital Versatile Disk)), a magneto-optical disc 123 (containing MD (Mini-Disk)), a semiconductor memory 124 or the like that has the program recorded therein and is distributed to supply the program to users separately from a computer, but also as a hard disc containing ROM 102 or a storage portion 108 that has the program recorded therein and is supplied to users under the state that it is installed in a computer in advance.

[0088] In this specification, the step describing the program to be supplied through the medium contains not only the processing that is carried out in a sequential time-series according to the described order, but also the processing that is not carried out in this order time-series, but in parallel to, or independent of this processing individually.

MARKED-UP COPY OF AMENDED CLAIMS:

2. (AMENDED) The information processing device as claimed in claim 1, wherein in accordance with each of a case where ~~it is analyzed by~~ said analyzing means determines that analog recording is released by paying an additional fee, a case where ~~it is analyzed by~~ said analyzing means determines that analog recording is allowed, but digital recording is not allowed ~~and~~ a case where ~~it is analyzed by~~ said analyzing means determines that neither analog recording nor digital recording is allowed, said display control means controls the display on the screen to make the user recognize the respective cases.

6. (AMENDED) The information processing method as claimed in claim 5, wherein in accordance with each of a case where ~~it is analyzed by~~ the processing of said analyzing step

determines that analog recording is released by paying an additional fee, a case where ~~it is analyzed by the processing of~~ said analyzing step determines that analog recording is allowed, but digital recording is not allowed ~~and~~ a case where ~~it is analyzed by the processing of~~ said analyzing step determines that neither analog recording nor digital recording is allowed, said display control step controls the display on the screen to make the user recognize the respective cases.

7. (AMENDED) The information processing device as claimed in claim 5, wherein said display control step controls the display so that a message of the processinganalysis result is displayed on the screen.

8. (AMENDED) The information processing device as claimed in claim 5, wherein said display control step controls the display so that the processinganalysis result is displayed on the screen for a predetermined time.

10. (AMENDED) The recording medium as claimed in claim 9, wherein in accordance with each of a case where ~~it is analyzed by the processing of~~ said analyzing step determines that analog recording is released by paying an additional fee, a case where ~~it is analyzed by the processing of~~ said analyzing step determines that analog recording is allowed, but digital recording is not allowed ~~and~~ a case where ~~it is analyzed by the processing of~~ said analyzing step determines that neither analog recording nor digital recording is allowed, said display control step controls the display on the screen to make the user recognize the respective cases.

11. (AMENDED) The recording medium as claimed in claim 9, wherein said display control step controls the display so that a message of the processinganalysis result is displayed on the screen.

12. (AMENDED) The recording medium as claimed in claim 9, wherein said display control step controls the display so that the processinganalysis result is displayed on the screen for a predetermined time.



REMARKS

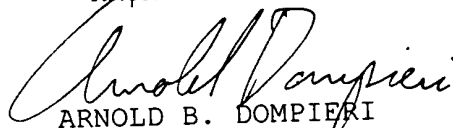
This amendment is submitted prior to initiation of prosecution of this application. A request to correct the drawings accompanies this amendment. No new matter is added by this amendment or this request.

The amendment corrects typographical and grammatical errors in the abstract, specification and claims and conforms the application to U. S. practice. The claims are clarified but neither narrowed in scope nor amended for the purpose of patentability. New claims 13-75 are presented to more fully and completely define the Applicant's inventive contribution.

Applicant respectfully requests that this amendment be entered and that prosecution on the merits of this application be initiated. If there are any charges in connection with this amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Respectfully submitted,

LERNER, DAVID, LITTENBERG,
KRUMHOLZ & MENTLIK, LLP


ARNOLD B. DOMPIERI
Reg. No. 29,736

600 South Avenue West
Westfield, NJ 07090-1497
Telephone: (908) 654-5000
Facsimile: (908) 654-7866

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